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DATA SUMMARY REPORT
NOVEMBER 2007 SAMPLING
BLACKHAWK FOUNDRY
Davenport, Iowa
EPA No. IAD05264049

REPA 4

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Introduction

This data summary report presents a review of the November 2007, United States Environmental Protection Agency (EPA) sampling conducted at the Blackhawk Foundry site, Davenport, Iowa. This sampling was conducted by SES, Inc. (SES) under contract to EPA. This data summary also presents an evaluation of the resultant analytical data and subsequent conclusions. Sample summary tables, sampling location maps, a photographic record of the sampling effort and telephone conversation records addressing this sampling activity are included in the appendices.

Sampling Objective

The Blackhawk Foundry has conducted soil sampling in the past. The sampling has been associated with past closure activities of an on-site bag house dust disposal pit, a Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) and a Corrective Measures Study (CMS). The sampling, reported in the 1999 CMS report, was largely based on collecting composite samples, which were used to represent large areas of the facility. Since this facility is in a residential neighborhood and the composite sampling detected levels of cadmium, chromium and lead that could have human health impacts, EPA requested that SES conduct a more detailed sampling based on the collection of grab samples in a more densely packed grid. EPA asked SES to quantify the rate and extent of surface soil (0 – 6 inches below grade) contamination in select areas of the facility. In addition, EPA tasked SES to conduct subsurface soil boring in each area to determine if foundry wastes had been buried in these areas. EPA needs this sampling to confirm the relative concentrations of the three target metals in select areas of the site. This data will be used by EPA to determine if further action is needed regarding the residual contamination at the site. Based on EPA file information and direction from the Task Order Contract Officer Representative (TOCOR), the following sampling target areas were identified at the Blackhawk Foundry: Areas A4, B3, B4, C

and D6 (see Appendix A, Figure 1). CMS sampling showed these areas to contain lead levels in excess of 250 parts per million (ppm).

To determine the rate and extent of this metals contamination, SES collected environmental samples in the specific areas. The TOCOR requested that SES collect one grab sample for every 400-square-foot grid area. Because this sampling was intended to determine the rate and extent of soil contamination, no background samples were collected.

The sampling plan and Quality Assurance Project Plan (QAPP) for this sampling effort was prepared as an addendum to the approved QAPP (R7QAMO Document No. 2007168) titled *Quality Assurance Project Plan for Iowa RCRA Sampling Visits.* The Blackhawk Foundry has been added to this project, Task Order No. 1 (EP-W-07-026), under contract number: EP-W-07-26, Regional Task Order Number: R726-02.

Sampling Discussion

The Blackhawk Foundry sampling occurred on November 26 and 27, 2007. The SES sampling team consisted of Mr. Eric Hess, team leader; Ms. Larissa Brown, sampler and site health and safety officer; and Mr. Drew Dodson, sampler. SES subcontracted PSA Environmental to supply a Geoprobe™ and operator for subsurface and sub-concrete sampling. The Geoprobe™ operator was Mr. Kenny Doane. SES arrived on site at 0800 hours on November 26, 2007. We met with Mr. Larry Thomsen, the facility's representative and Environmental Coordinator, and the Facility Engineer, Mr. Don Resel. We discussed the upcoming sampling, and Mr. Thomsen and Mr. Resel took the sampling team on a walking tour around the facility. During this walkthrough, we pointed out sampling areas and discussed on-site physical hazards. Mr. Thomsen asked SES to establish its staging area adjacent to Mr. Resel's office, just northwest of Area C. Mr. Resel's office is in the north end of the former daycare center adjacent to Area C (Figure 1, Appendix A).

After the tour, the SES team proceeded to mark sampling points in all the targeted sampling areas described above. A total of 90 sample points were marked: 10 points in Area A4 (Figure 2, Appendix A), 37 points in Areas B3 and B4 combined (Figure 3, Appendix A), 33 points in Area C (Figure 4, Appendix A) and 10 points in Area D6 (Figure 5, Appendix A). Eighty-five sample points were described in the QAPP: 10 points in Area A4, 33 points in Areas B3 and B4 combined, 32 points in Area C and 10 points in Area D6. The slight discrepancy in Areas B3/B4 and C are due to either difficulties in identifying exact area boundaries (Areas B3 and B4) or the actual area being slightly larger than anticipated (Area C).

At 1130 hours, Mr. Doane arrived and by 1430 hours sampling had begun at location #001. As described in the QAPP, SES conducted two deep borings in each area. Mr. Hess, a certified professional soil scientist (#28569), logged the boreholes and made determinations regarding the collection of samples of opportunity at depth, see Appendix B. These boreholes were advanced to 12 feet below ground surface (bgs) to evaluate the possibility that foundry materials may have been located below the 0.0 to 6.0 inch targeted sampling interval. These locations are noted on the maps in Appendix A with sample number and asterisk. Brief descriptions of the borehole logs are included in Appendix B. The United States Department of Agriculture splits this site into two distinct soil types (Appendix B). The western half is classified as a Colo-Urban Land Complex (Mapping Unit 4133) and the eastern half is classified as a Richwood-Urban Land Complex (Mapping Unit 4977B). While the boreholes were not logged for soil classification, the borehole logs do generally agree with the soil profile descriptions provided for these two soil series. The black to gray color of the Colo-Urban Land Complex made positive identification of residual foundry waste in the subsoil difficult. Decisions to collect samples in this soil were subjective, being based on abrupt color or textural changes in the subsoil that were considered inconsistent with what was being logged in a particular borehole.

Sampling continued the first day until 1830 hours. The first day, samples #001 – #025 and #201were collected.

Sampling activities on November 26, 2007, commenced at 0815 hours and continued until 1800 hours. Samples #26 – #100 and #202 were collected on this date.

SES returned to the facility at 0800 on November 27, 2007, to brief Mr. Thomsen on the activities that had occurred and to verify that all sample locations had been sealed and that all concrete borings were patched.

SES delivered the samples to the EPA Region 7 laboratory for analysis on November 29, 2007. The samples were delivered under chain-of-custody.

Based on the sampling activities that occurred, only one deviation to the approved QAPP occurred. This deviation involved erroneous geographic positioning satellite (GPS) readings recorded for samples #007 – #012. This failure to record representative GPS coordinates does not impact the usability of these samples since the team leader was also marking the sample points, in real time, on a facility map. Because the relative accuracy of the GPS used was ±more than the actual sample spacing, the GPS coordinates alone are not effective means of locating sample points. SES used the team leader's map and the GPS coordinates to produce the maps in Appendix A.

Data Analysis

These sample results were released on December 29, 2007, see Tables 1 through 4, Appendix C. The laboratory quality control summary indicated that there were no significant quality control issues that would impact data quality and subsequent analysis. Appendix D presents a photographic record of the sampling effort and sample locations.

The target analytes lead, chrome and cadmium were detected in all samples.

The following sample pairs represent a sample and its field duplicate (FD): #0101 and 0101FD, 021 and 021FD, 030 and 030FD, 040 and 040FD, 050 and 050FD, 060 and 060FD, 070 and 070FD, 080 and 080FD, and 090 and 090FD. The relative percent difference (RPD) for the three target analytes, for each pair of sample and FD, can be used to assess sampling and analytical error, see Table 5, Appendix C. According to the approved QAPP, an RPD of less than 100 percent is acceptable for this sampling effort. The RPDs for the target analytes ranged from 1.2 to 29.1 percent for lead, 3.3 to 18.3 percent for chromium and 0.0 to 51.9 percent for cadmium. These values are less than the RPD threshold of 100 percent identified in the approved QAPP; therefore, sampling and analytical error met project data quality criteria. In addition, rinseate samples 201 and 204 contained no reportable concentrations of these three target analytes. The method reporting limits for lead, chromium and cadmium were 50 parts per billion (ppb), 15 ppb and 3.0 ppb, respectively. This indicates that sample equipment decontamination procedures were adequate to prevent cross-contamination between samples.

SES compared the detected concentrations of target metals to the EPA Region 9 Preliminary Remediation Goals (PRG). Relevant PRGs are reported for residential and industrial exposures (see Table 6). Along with the PRGs, Region 9 presents soils screening levels (SSL) that quantify the potential for a contaminant leaching into groundwater (Table 6). SSLs are presented for dilution attenuation factors (DAF) of 20 and 1. A DAF of 20 represents natural attenuation of a contaminant as it moves through a soil, addressing physical and biological processes. A DAF of 1 represents a worst-case scenario where there is no attenuation of the chemical as it leaches through the soil. There are no SSLs for lead reported in the Region 9 PRGs.

Because this facility is located in a residential area, samples were only compared to the residential PRGs for the three target analytes. In addition, because almost all the samples exceeded the associated DAF 1 SSLs for chromium and cadmium, only samples exceeding the associated DAF 20 SSLs will be discussed in this report.

Samples 6, 36, 55 and 101 contained lead concentrations exceeding its residential PRG (400 ppm). The concentrations of lead in these samples ranged from 423 to 823 ppm. Samples 6, 36 and 55 were collected from the surface soil, 0 to 6 inches bgs. The soil surface for samples 6 and 36 was located below 6 to 8 inches of concrete. Sample 101 was collected from 7.5 to 8.0 feet bgs in the area near the former "gator pit." Figures 6 through 8, in Appendix A, show areas of lead contamination. The iso-concentration lines on these figures are for 100 ppm and 200 ppm. The areas that are shaded with associated concentration indicators represent approximate areas of concentrations exceeding the residential PRG.

No soil samples contained concentrations of chromium that matched or exceed the residential PRG for chromium (210 ppm). Chromium concentrations in samples 3, 6, 42, 47 and 55 exceeded the DAF 20 SSL of 38 ppm.

No soil samples contained concentrations of cadmium that matched or exceed the residential PRG for cadmium (37 ppm). Cadmium concentrations in samples 6, 43 and 55 exceeded the DAF 20 SSL of 8.0 ppm.

Conclusion

The primary objective of this sampling effort was to determine if there were any hot spots of lead, chromium or cadmium contamination at the Blackhawk Foundry, Davenport, Iowa. A hot spot is defined, for this sampling effort, as a concentration exceeding the residential PRG for a compound. This sampling effort identified three hot spots in Area B3/B4, all in the 0 to 6 inch depth interval, and one hot spot in Area A4, near the former "gator pit" location at a depth of 7.5 to 8.0 feet bgs. The exact extent of the hot spots has not been defined. This is especially true of the depth of contamination at the hot spots in Area B3/B4.

All but one of these areas is overlain by 6 to 8 inches of concrete. Future construction in any of these areas could release lead contaminated dust into the surrounding neighborhood. Due to the elevated concentrations of lead detected, it is possible that such a release could pose a health or environmental risk to nearby residents and wildlife. The immediate area around sample location No. 55 is only covered by a thin layer of gravel. This area is a heavy traffic area for workers and delivery vehicles. Since this contamination is at the soil surface, disturbance of the soil could result in a release of lead contaminated dust that could have a potential health impact on workers.

APPENDIX A

FACILITY MAPS

FIGURE 1
BLACKHAWK FOUNDRY AND SAMPLING AREA LOCATIONS
Courtesy of Stanley Consultants, Inc. 1997

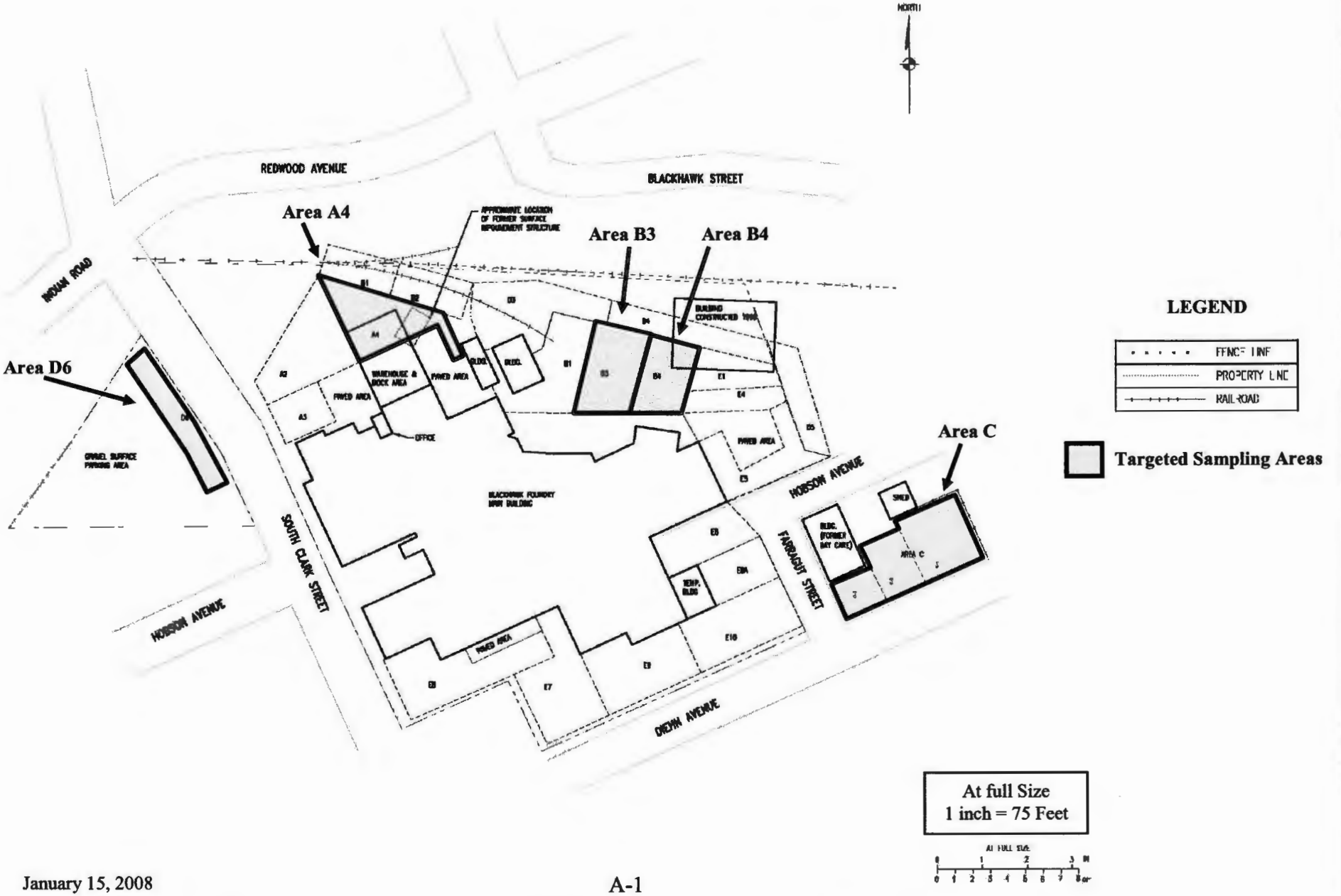
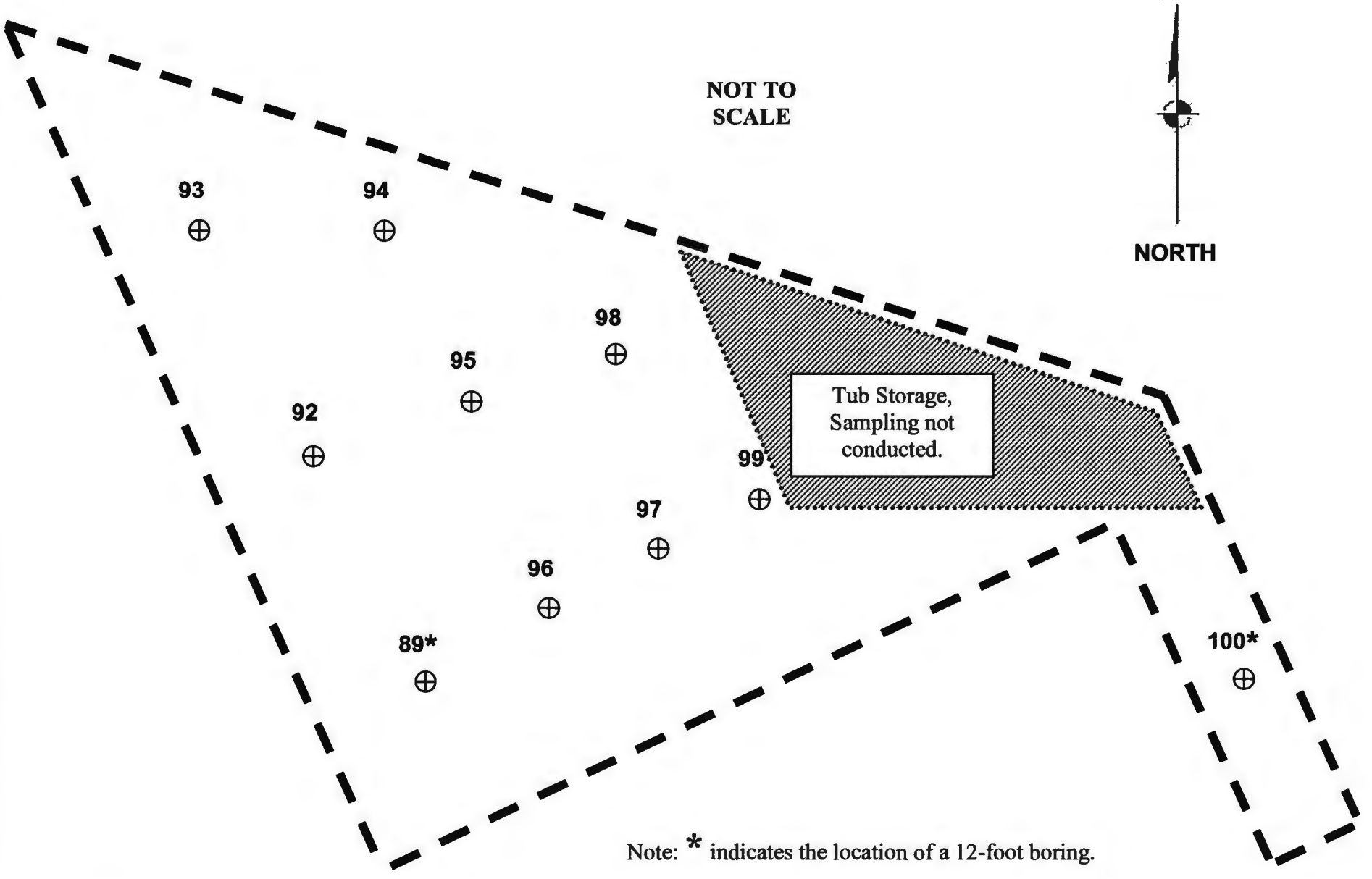
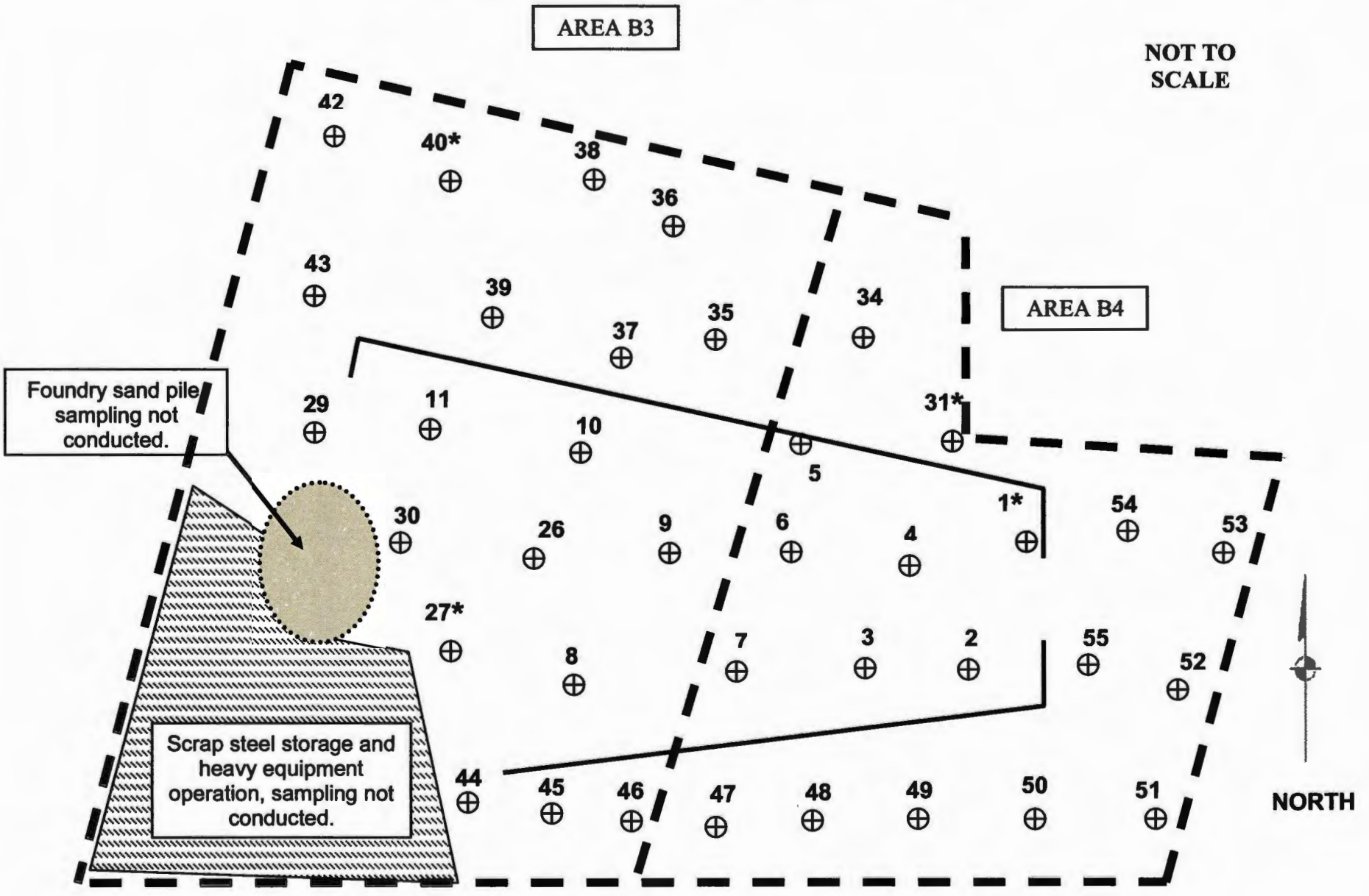


FIGURE 2. SAMPLE POINTS IN AREA A-4



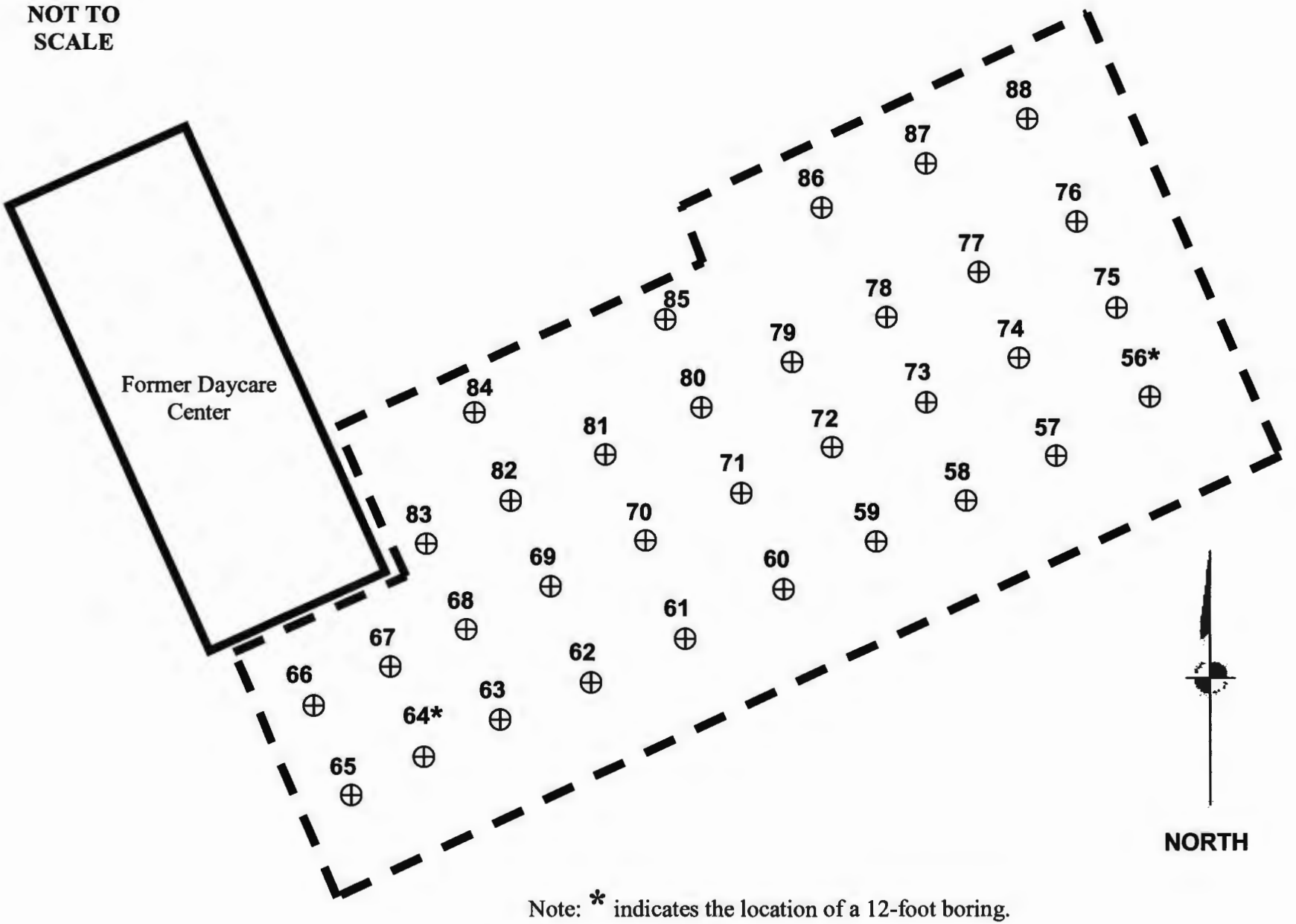
Note: * indicates the location of a 12-foot boring.

FIGURE 3. SAMPLE POINTS IN AREAS B-3 and B-4



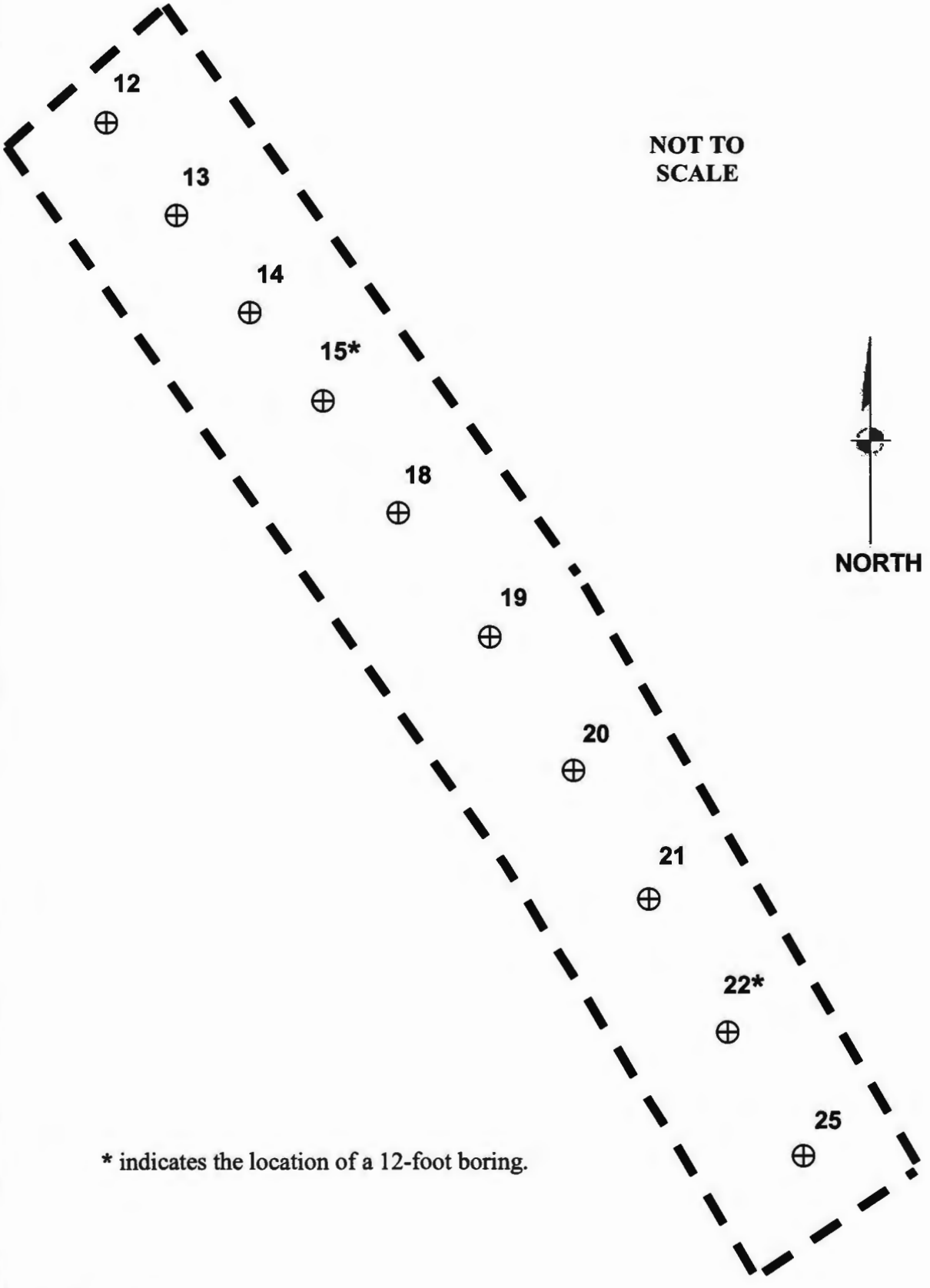
Note: * indicates the location of a 12-foot boring.

FIGURE 4. SAMPLE POINTS IN AREA C



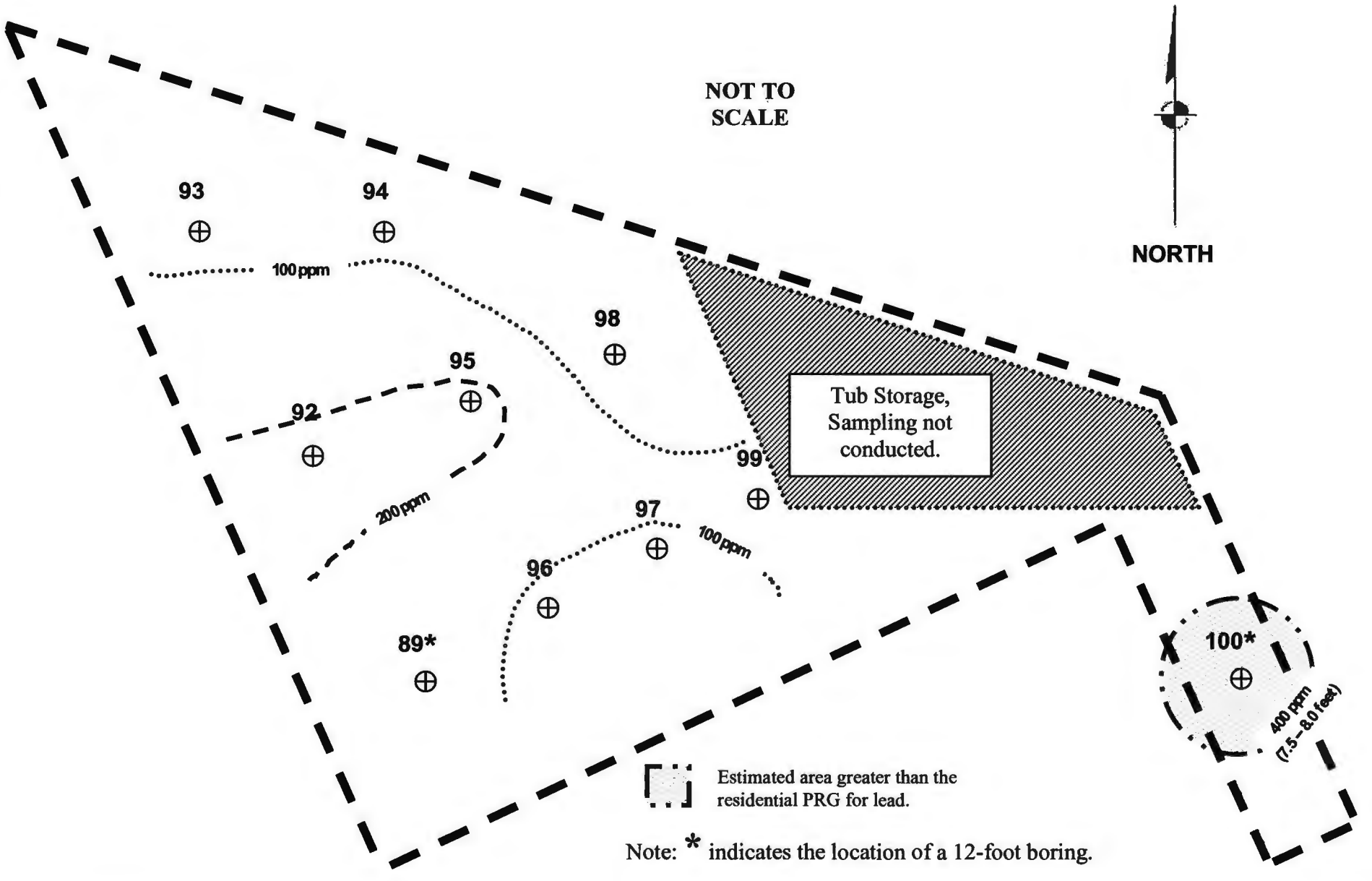
Note: * indicates the location of a 12-foot boring.

FIGURE 5. SAMPLE POINTS IN AREA D-6



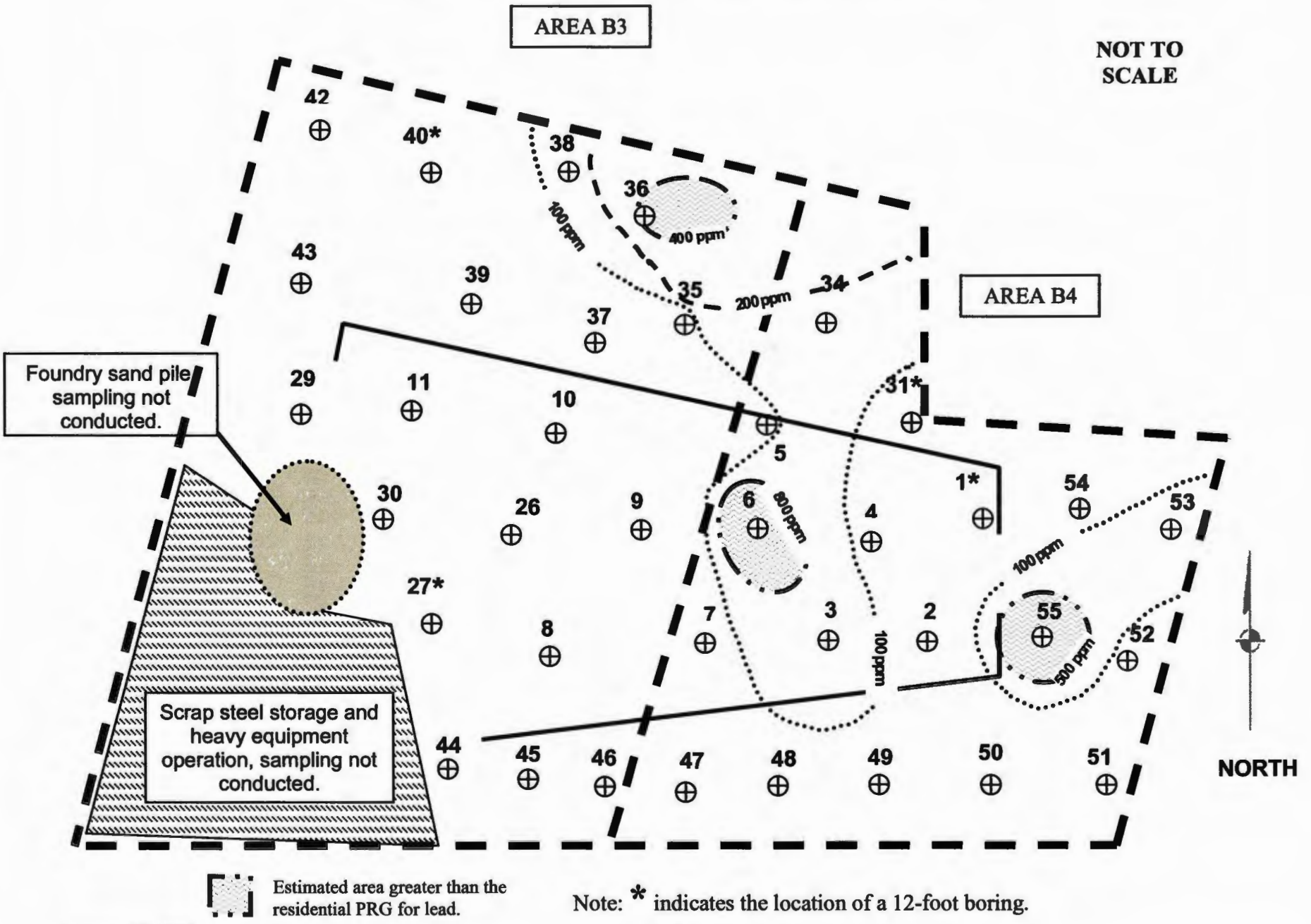
* indicates the location of a 12-foot boring.

FIGURE 6. LEAD CONCENTRATIONS AREA A-4



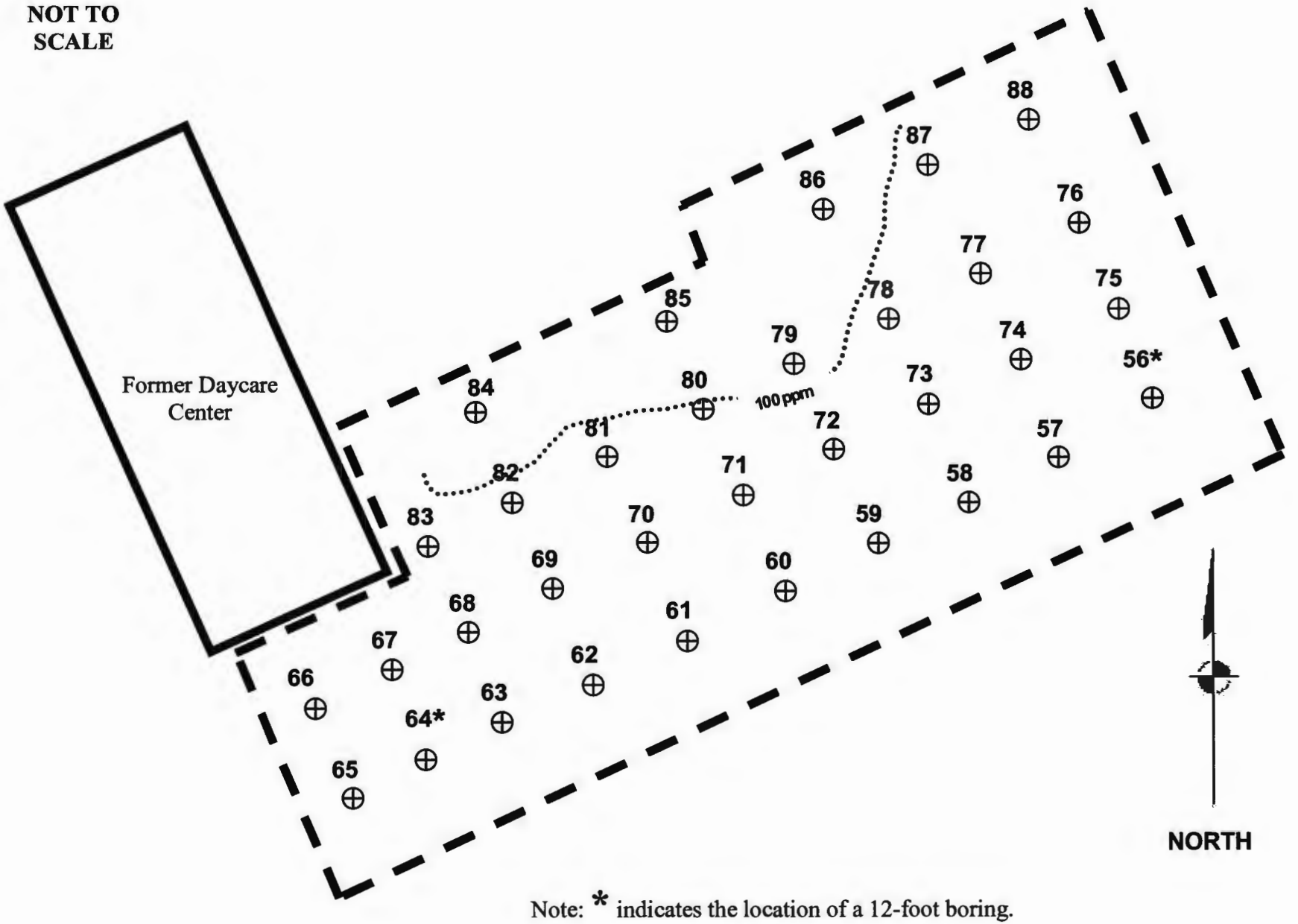
Note: * indicates the location of a 12-foot boring.

FIGURE 7. LEAD CONCENTRATIONS IN AREAS B-3 and B-4



Note: * indicates the location of a 12-foot boring.

FIGURE 8. LEAD CONCENTRATIONS IN AREA C



Note: * indicates the location of a 12-foot boring.

APPENDIX B

BOREHOLE LOGS AND SOIL MAP

BLACKHAWK FOUNDRY
Subsurface Borehole Logs
November 26 and 27, 2007

Area B4

Sample Location #01

0 – 8 inches	Concrete.
8 – 14 inches	Black gravel and fine sand.
14 – 48 inches	Dark brown silt with some brown and red mottling.
48 – 144 inches	Light brown silt with abundant mottling. The bottom 6 inches is at field capacity.

Samples collected: None.

Sample Location #31

0 – 8 inches	Concrete.
8 – 42 inches	Dark brown to black silt loam.
42 – 66 inches	Dark brown to black silt loam intermixed with brown silt loam, some mottling and manganese nodules are visible.
66 – 86 inches	Black silt loam with some mottling.
86 – 89 inches	Medium brown sand.
89 – 120 inches	Intermixed black and brown silt loam. The clay content increases with depth.
120 – 144 inches	Brown silt with abundant mottles. The soil is at or slightly above field capacity at 144 inches.

Samples collected: #32 (72 – 78 inches) and #33 (108 – 114 inches)

Area B3

Sample Location #027

0 – 18 inches	Tan medium sand with some gravel.
18 – 36 inches	Dark brown to black loam.
36 – 52 inches	Dark brown silty clay.
52 – 58 inches	Brown silt loam.
58 – 62 inches	Brown silty clay loam.
62 – 82 inches	Brown silty clay loam. Mottling becomes apparent at 72 inches and below.
82 – 144 inches	Brown silty sand with mottling increasing with depth. This push had low (~33%) sample recovery.

Samples collected: #28 (30 – 36 inches)

Area B3 (continued)

Sample Location #40

0 – 6 inches	Concrete.
6 – 9 inches	Limestone gravel.
9 – 36 inches	Black silt loam.
36 – 48 inches	Light greenish brown silt loam.
48 – 96 inches	Poor recovery (~50%). Brown silty clay with mottling.
96 – 102 inches	Black silt loam with some gravel.
102 – 144 inches	Brown silt loam with mottling.

Samples collected: #41 (108 – 114 inches)

Area D6

Sample Location #15

0 – 18 inches	Brown clay with some small gravel.
18 – 48 inches	Dark brown loam.
48 – 92 inches	Dark brown silty loam.
92 – 108 inches	Dark brown silty sand.
108 – 144 inches	Fine light brown to tan fine sand, coarseness increases with depth.

Samples collected: #16 (42 – 48 inches) and #17 (108 – 114 inches)

Sample Location #22

0 – 36 inches	Brown silty clay loam.
36 – 52 inches	Dark brown loam.
52 – 102 inches	Brown silty sand.
108 – 138 inches	Tan sand.
138 – 144 inches	Saturated brown silty sand.

Samples collected: #23 (42 – 48 inches) and #17 (108 – 114 inches)

Area C

Sample Location #56

0 – 28 inches	Black clay loam.
28 – 48 inches	Brown clay with abundant mottles.
48 – 60 inches	Brown sandy clay with abundant mottles.
60 – 84 inches	Brown silty clay with abundant mottles.
84 – 144 inches	Brown silt with abundant mottles.

Samples collected: None.

Sample Location #64

0 – 28 inches	Black silt loam.
28 – 48 inches	Black clay transitioning to brown clay with some mottles.
48 – 96 inches	Brown silty clay with abundant mottles and some manganese nodules.
96 – 144 inches	Brown silt at field capacity with abundant mottles and manganese nodules.

Samples collected: None.

Area A4

Sample Location #89

0 – 36 inches	Limestone gravel intermixed with black loam and brown silty sand, some brick fragments.
36 – 48 inches	Black silty loam.
48 – 60 inches	Brown silty sand with some mottling.
60 – 112 inches	Dark brown silty clay with some mottling.
112 – 120 inches	Gray medium sand grading to an orange sand with some gravel.
120 – 128 inches	Orange-brown silty clay with abundant mottles.
128 – 144 inches	Medium sand at field capacity.

Samples collected: #90 (36 – 42 inches) and #91 (68 – 76 inches)

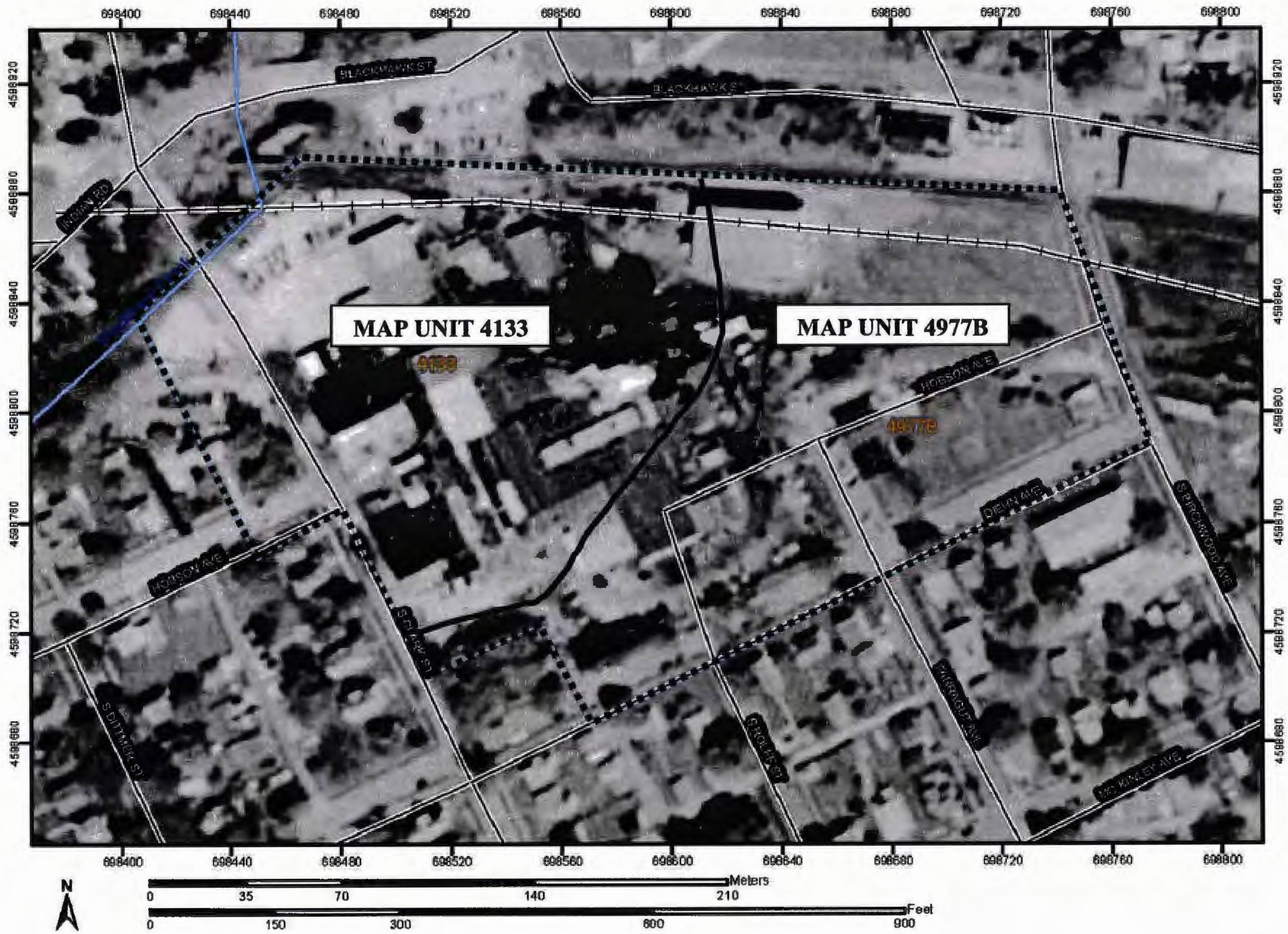
Area A4 (continued)

Sample Location #100

0 – 8 inches	Concrete.
8 – 84 inches	Brown silt.
84 – 108 inches	Black silt. At 96 inches, plastic waste (plastic sheeting or parts of a bag) was encountered.
108 – 120 inches	Brown silt.
120 – 126 inches	Brown silty sand.
126 – 132 inches	Dark brown silt.
132 – 144 inches	Medium brown sand with some gravel.

Samples collected: #101 (90 – 96 inches) and #102 (126 – 132 inches)

Soil Map–Scott County, Iowa
(Blackhawk Foundry)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 15N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Scott County, Iowa
Survey Area Data: Version 12, Sep 17, 2007

Date(s) aerial images were photographed: 2002

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Scott County, Iowa (IA163)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4133	Colo-Urban land complex, 0 to 2 percent slopes	6.3	50.6%
4977B	Richwood-Urban land complex, 1 to 5 percent slopes	6.2	49.4%
Totals for Area of Interest (AOI)		12.5	100.0%

APPENDIX C

SAMPLE SUMMARY TABLES

TABLE 1
AREA – A4 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-89	15T 0698489 4598875	11-27-09	SW846 - 6010A	Brown silty sand, some brick	Soil	0.0 – 0.5	149	14.0	4.0
3700-90	**15T 0698489 4598875**	**11-27-07**	**SW846 - 6010A**	**Black silty loam**	**Soil**	**3.0 – 4.0**	**236**	**12.2**	**5.4**
3700-90FD	**15T 0698489 4598875**	**11-27-07**	**SW846 - 6010A**	**Field duplicate**	**Soil**	**3.0 – 4.0**	**180**	**14.7**	**4.6**
3700-91	**15T 0698489 4598875**	**11-27-07**	**SW846 - 6010A**	**Dark brown silty clay loam**	**Soil**	**5.5 – 6.0**	**13.2**	**11.5**	**2.3**
3700-92	15T 0698483 4598869	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	236	21.9	6.3
3700-93	15T 0698476 4598874	11-27-07	SW846 - 6010A	Loamy sand, brown/orange	Soil	0.0 – 0.5	93.3	18.5	6.7
3700-94	15T 0698487 4598875	11-27-07	SW846 - 6010A	Loamy sand, orange/brown	Soil	0.0 – 0.5	15.5	8.1	3.1
3700-95	15T 0698481 4598870	11-27-07	SW846 - 6010A	Black loamy, some sand, some orange	Soil	0.0 – 0.5	267	27.0	5.1
3700-96	15T 0698484 4598873	11-27-07	SW846 - 6010A	Lots of gravel	Soil	0.0 – 0.5	59.5	9.8	3.4
3700-97	Area A4 15T 0698495 4598869	11-27-07	SW846 - 6010A	Some gravel	Soil	0.0 – 0.5	83.0	13.0	6.2
3700-98	15T 0698500 4598870	11-27-09	SW846 - 6010A	Sand and loam, some gravel	Soil	0.0 – 0.5	21.6	9.4	3.9

TABLE 1 (continued)
AREA – A4 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-99	15T 0698491 4598871	11-27-07	SW846 - 6010A	Lots of gravel	Soil	0.0 – 0.5	137	12.1	7.6
*3700-100	15T 0698515 4598871	11-27-07	SW846 - 6010A	Brown silt	Soil	0.0 – 0.5	11.2	14.8	3.0
***3700-101**	**15T 0698515 4598871**	**11-27-07**	**SW846 - 6010A**	**Black silt**	**Soil**	**7.5 – 8.0**	**429**	**28.3**	**7.8**
***3700-102**	**15T 0698515 4598871**	**11-27-07**	**SW846 - 6010A**	**Dark brown silt**	**Soil**	**10.5 – 11.0**	**56.5**	**11.6**	**2.0**

Note: J The J-code was added to the sample results to reflect the low extraction recovery associated with analyzing these samples.

U The U-code was added to the sample results to indicate that the compound was not detected; the listed value is the reporting limit for the analysis.

XX Bold text indicates samples deeper than 0 – 6 inches below grade.

* Advanced through 6 to 8 inches of concrete. The shallow sample was collected from 0 – 6 inches below the concrete.

TABLE 2
AREAS – B3 and B4 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
*3700-1	15T 0698603 4598853	11-26-07	SW846 - 6010A	Black soil/sand	Soil	0.0 – 0.5	16.0	11.0	2.9
*3700-2	15T 0698604 4598854	11-26-07	SW846 - 6010A	Black soil/sand	Soil	0.0 – 0.5	42.4	8.7	3.6
*3700-3	15T 0698600 4598847	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	151	44.4	4.6
*3700-4	15T 0698600 4598852	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	57.7	34.0	4.7
*3700-5	15T 0698601 4598853	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	92.0	11.3	4.1
*3700-6	15T 0698592 4598858	11-26-07	SW846 - 6010A	Hit wood at 21/2 ft, black fine sand	Soil	0.0 – 0.5	823	48.3	10.8
*3700-7	Not recorded	11-26-07	SW846 - 6010A	Black debris in sample, some clay and silt	Soil	0.0 – 0.5	49.0	28.3	9.2
*3700-8	Not recorded	11-26-07	SW846 - 6010A	Lots of brick in sample	Soil	0.0 – 0.5	20.7	9.2	3.2
*3700-9	Not recorded	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	37.9	6.6	2.6
*3700-10	Not recorded	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	18.8	8.8	2.0
*3700-10FD	Not recorded	11-26-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	23.0	9.2	3.4

TABLE 2 (continued)

AREAS – B3and B4 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
*3700-11	Not recorded	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	32.3	7.4	6.0
*3700-26	15T 0698582 4598855	11-27-07	SW846 - 6010A	Sand and silt	Soil	0.0 – 0.5	79.8	8.8	3.0
3700-27	15T 0698586 4598850	11-27-07	SW846 - 6010A	Lots of sand	Soil	0.0 – 0.5	11.7	3.4	1.1
3700-28	**15T 0698586 4598850**	**11-27-07**	**SW846 - 6010A**	**21/2-3ft**	**Soil**	**2.5 – 3.0**	**93.8**	**10.9**	**3.7**
3700-29	15T 0698578 4598868	11-27-07	SW846 - 6010A	Clay/silt foundry sand	Soil	0.0 – 0.5	22.6	9.7	3.6
3700-30	15T 0698578 4598854	11-27-07	SW846 - 6010A	Lots of gravel	Soil	0.0 – 0.5	16.0	12.5	2.9
3700-30FD	15T 069857 4598854	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	16.2	10.4	2.6
*3700-31	15T 0698618 4598854	11-27-07	SW846 - 6010A	Dark brown to black silt loam	Soil	0.0 – 0.5	52.9	5.8	1.8
***3700-32**	**15T 0698618 4598854**	**11-27-07**	**SW846 - 6010A**	**Black silt loam**	**Soil**	**6.0 – 6.5**	**177**	**17.9**	**4.1**
***3700-33**	**15T 0698618 4598854**	**11-27-07**	**SW846 - 6010A**	**Black silt loam**	**Soil**	**9.0 – 9.5**	**128**	**13.9**	**3.9**
*3700-34	15T 0698605 4598853	11-27-07	SW846 - 6010A	Brick and sand	Soil	0.0 – 0.5	172	13.8	6.7
*3700-35	15T 0698604 4598858	11-27-07	SW846 - 6010A	Black sand and sandy clay	Soil	0.0 – 0.5	76.5	14.0	5.7
*3700-36	15T 0698596 4598856	11-27-07	SW846 - 6010A	Black sand	Soil	0.0 – 0.5	423	36.2	5.5

TABLE 2 (continued)
AREAS – B3and B4 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
*3700-37	15T 0698595 4598865	11-27-07	SW846 - 6010A	Lots of gravel	Soil	0.0 – 0.5	60.0	15.1	5.5
*3700-38	15T 0698597 4598868	11-27-07	SW846 - 6010A	Black substance, yellow coloring	Soil	0.0 – 0.5	123J	19.7	6.4
*3700-39	15T 0698589 4598863	11-27-07	SW846 - 6010A	Clay and brick	Soil	0.0 – 0.5	9.9	10.0	2.0
*3700-40	15T 0698589 4598863	11-27-07	SW846 - 6010A	Clay-silt, fine sand	Soil	0.0 – 0.5	30.6	11.5	6.3
*3700-40FD	15T 0698589 4598863	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	33.7	10.7	6.0
***3700-41**	**15T 0698589 4598863**	**11-27-07**	**SW846 - 6010A**	**Brown silt loam**	**Soil**	**9.0 – 9.5**	**17.4**	**13.3**	**3.0**
*3700-42	15T 0698584 4598866	11-27-07	SW846 - 6010A	Black loamy material	Soil	0.0 – 0.5	91.9	59.8	7.6
*3700-43	15T 0698585 4598867	11-27-07	SW846 - 6010A	Lots of gravel, black loamy material	Soil	0.0 – 0.5	60.6	21.3	9.7
3700-44	15T 0698578 4598846	11-27-07	SW846 - 6010A	Black loamy material	Soil	0.0 – 0.5	61.0	12.0	6.4
3700-45	15T 0698588 4598846	11-27-07	SW846 - 6010A	Black loamy material	Soil	0.0 – 0.5	51.5	12.9	6.9

TABLE 2 (continued)
AREAS – B3and B4 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-46	15T 0698593 4598839	11-27-07	SW846 - 6010A	Black and loamy, collected under gravel area	Soil	0.0 – 0.5	20.0	10.7	2.8
3700-47	15T 0698597 4598838	11-27-07	SW846 - 6010A	Black and loamy material	Soil	0.0 – 0.5	21.3	42.0	3.2
3700-48	15T 0698607 4598845	11-27-07	SW846 - 6010A	Black sand some gravel and clay	Soil	0.0 – 0.5	27.7	20.7	6.2
3700-49	15T 0698613 4598840	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	21.0	16.0	3.7
3700-50	15T 0698619 4598845	11-27-07	SW846 - 6010A	Black loam and clay	Soil	0.0 – 0.5	30.4	18.7	3.1
3700-50FD	15T 0698619 4598845	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	27.9	17.6	3.2
3700-51	15T 0698654 4598846	11-27-07	SW846 - 6010A	Black, silty clay	Soil	0.0 – 0.5	63.4J	25.1J	5.7
3700-52	15T 0698621 4598852	11-27-07	SW846 - 6010A	Lots of gravel	Soil	0.0 – 0.5	63.5	16.9	3.3
3700-53	15T 0698620 4598852	11-27-07	SW846 - 6010A	Black and loamy material, some gravel	Soil	0.0 – 0.5	151	16.5	4.9

TABLE 2 (continued)
AREAS – B3and B4 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-54	15T 0698616 4598853	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	16.1	11.0	2.7
3700-55	15T 0698616 4598855	11-27-07	SW846 - 6010A	Black loam	Soil	0.0 – 0.5	534	49.4	8.7

Note: J The J-code was added to the sample results to reflect the low extraction recovery associated with analyzing these samples.

U The U-code was added to the sample results to indicate that the compound was not detected; the listed value is the reporting limit for the analysis.

XX Bold text indicates samples deeper than 0 – 6 inches below grade.

* Advanced through 6 to 8 inches of concrete. The shallow sample was collected from 0 – 6 inches below the concrete.

TABLE 3
AREA – C SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-56	15T 0698727 4598793	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	32.6	16.3	3.5
3700-57	15T 0698721 4598786	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	69.4	17.0	4.0
3700-58	15T 0698715 4598785	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	49.6	16.1	3.8
3700-59	15T 0698711 4598784	11-27-07	SW846 - 6010A	Loamy soil	Soil	0.0 – 0.5	91.2	16.4	4.0
3700-60	15T 0698703 4598782	11-27-07	SW846 - 6010A	Some clay	Soil	0.0 – 0.5	26.1	20.2	4.2
3700-60FD	15T 0698703 4598782	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	35.0	18.2	4.2
3700-61	15T 0698699 4598779	11-27-07	SW846 - 6010A	Some clay	Soil	0.0 – 0.5	44.3	14.1	3.1
3700-62	15T 0698691 4598778	11-27-07	SW846 - 6010A	Some clay and dark soil	Soil	0.0 – 0.5	27.2	9.2	3.1
3700-63	15T 0698689 4598777	11-27-07	SW846 - 6010A	Dark soil	Soil	0.0 – 0.5	98.8	14.7	3.0
3700-64	15T 0698680 4598769	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	23.7	16.0	3.1
3700-65	15T 0698680 4598766	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	45.9	15.2	3.2
3700-66	15T 0698673 4598775	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	52.6	14.2	2.9
3700-67	Area C 15T 0698679 4598776	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	26.3	16.8	3.4

TABLE 3 (continued)
AREA – C SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-68	15T 0698684 4598781	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	57.0	14.3	3.1
3700-69	15T 0698696 4598781	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	92.2	13.6	3.5
3700-70	15T 0698698 4598779	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	30.7	16.8	3.7
3700-70FD	15T 0698698 4598779	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	29.4	20.1	4.0
3700-71	15T 0698765 4598805	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	39.6	12.5	2.7
3700-72	15T 0698702 4598791	11-27-07	SW846 - 6010A	Black soil, some clay	Soil	0.0 – 0.5	23.4	10.2	2.3
3700-73	15T 0698711 4598804	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	78.8	18.3	4.1
3700-74	15T 0698717 4598796	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	84.8	15.9	3.6
3700-75	15T 0698725 4598792	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	46.4	16.6	3.8
3700-76	15T 0698717 4598794	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	56.8	16.4	3.8
3700-77	15T 0698719 4598800	11-27-07	SW846 - 6010A	Dark soil	Soil	0.0 – 0.5	55.0	15.0	3.4
3700-78	15T 0698706 4598790	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	72.4	16.8	4.0
3700-79	15T 0698703 4598792	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	139	18.0	4.4

TABLE 3 (continued)
AREA – C SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-80	15T 0698701 4598795	11-27-07	SW846 - 6010A	Black and loamy soil	Soil	0.0 – 0.5	67.1	20.8	4.6
3700-80FD	15T 0698701 4598795	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	63.8	19.6	4.4
3700-81	15T 0698692 4598790	11-27-07	SW846 - 6010A	None	Soil	0.0 – 0.5	51.2	16.0	3.5
3700-82	15T 0698691 4598787	11-27-07	SW846 - 6010A	Black loamy soil	Soil	0.0 – 0.5	86.5	10.5	3.2
3700-83	15T 0698688 4598766	11-27-07	SW846 - 6010A	Black loamy soil	Soil	0.0 – 0.5	42.3	16.7	3.4
3700-84	15T 0698704 4598788	11-27-07	SW846 - 6010A	Black loam, sand at 1ft	Soil	0.0 – 0.5	169	12.4	6.6
3700-85	15T 0698703 4598797	11-27-07	SW846 - 6010A	Black loamy soil	Soil	0.0 – 0.5	185	16.2	5.0
3700-86	15T 0698710 4598802	11-27-07	SW846 - 6010A	Black loamy soil	Soil	0.0 – 0.5	115	18.4	4.6
3700-87	15T 0698716 4598799	11-27-07	SW846 - 6010A	Black loamy soil	Soil	0.0 – 0.5	77.0	18.3	4.2
3700-88	15T 0698722 4598813	11-27-07	SW846 - 6010A	Black loamy soil	Soil	0.0 – 0.5	58.1	18.4	3.9

Note: J The J-code was added to the sample results to reflect the low extraction recovery associated with analyzing these samples.

U The U-code was added to the sample results to indicate that the compound was not detected; the listed value is the reporting limit for the analysis.

XX Bold text indicates samples deeper than 0 – 6 inches below grade.

* Advanced through 6 to 8 inches of concrete. The shallow sample was collected from 0 – 6 inches below the concrete.

TABLE 4
AREA – D6 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-12	Not recorded	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	72.9	11.4	2.9
3700-13	15T 0698429 4598845	11-26-07	SW846 - 6010A	Silty clay	Soil	0.0 – 0.5	32.8	9.9	2.6
3700-14	15T 0698437 4598831	11-26-07	SW846 - 6010A	Silty clay	Soil	0.0 – 0.5	33.2	9.2	3.3
3700-15	15T 0698438 4598828	11-26-07	SW846 - 6010A	Clay and silt	Soil	0.0 – 0.5	31.4	13.0	2.7
3700-16	**15T 0698438 4598828**	**11-26-07**	**SW846 - 6010A**	**Dark loam**	**Soil**	**3.5 – 4.0**	**18.9**	**8.2**	**2.5**
3700-17	**15T 0698438 4598828**	**11-26-07**	**SW846 - 6010A**	**Tan sand**	**Soil**	**9.0 – 9.5**	**5.4 U**	**7.1**	**1.5**
3700-18	15T 0698442 4598819	11-26-07	SW846 - 6010A	Sand	Soil	0.0 – 0.5	56.8	20.6	7.6
3700-19	15T 0698443 4598822	11-26-07	SW846 - 6010A	Sandy silt	Soil	0.0 – 0.5	23.1	9.8	3.0
3700-20	15T 0698443 4598823	11-26-07	SW846 - 6010A	Sand and silt	Soil	0.0 – 0.5	19.3	6.6	1.5
*3700-21	15T 0698440 4598823	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	23.8	10.4	2.6
*3700-21FD	15T 0698440 4598823	11-26-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	25.1	9.5	2.6
3700-22	15T 0698451 4598808	11-26-07	SW846 - 6010A	Silty clay	Soil	0.0 – 0.5	28.2	9.4	3.0

TABLE 4 (continued)
AREA – D6 SOIL SAMPLING SUMMARY
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-23	**15T 0698451 4598808**	**11-26-07**	**SW846 - 6010A**	**Dark brown loam**	**Soil**	**3.5 – 4.0**	**9.2**	**10.2**	**2.3**
3700-24	**15T 0698451 4598808**	**11-26-07**	**SW846 - 6010A**	**Tan sand**	**Soil**	**9.0 – 9.5**	**5.1U**	**5.1**	**1.1**
3700-25	15T 0698456 4598801	11-26-07	SW846 - 6010A	Sand	Soil	0.0 – 0.5	39.2	11.0	3.9

Note: J The J-code was added to the sample results to reflect the low extraction recovery associated with analyzing these samples.

U The U-code was added to the sample results to indicate that the compound was not detected; the listed value is the reporting limit for the analysis.

XX Bold text indicates samples deeper than 0 – 6 inches below grade.

* Advanced through 6 to 8 inches of concrete. The shallow sample was collected from 0 – 6 inches below the concrete.

TABLE 5
QUALITY CONTROL SAMPLES
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
*3700-10	15T 0698598 4598859	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	18.8	8.8	2.0
*3700-10FD	15T 0698598 4598859	11-26-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	23.0	9.2	3.4
Relative Percent Difference (RPD)							20.1	4.4	51.9
*3700-21	15T 0698440 4598823	11-26-07	SW846 - 6010A	None	Soil	0.0 – 0.5	23.8	10.4	2.6
*3700-21FD	15T 0698440 4598823	11-26-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	25.1	9.5	2.6
Relative Percent Difference (RPD)							5.3	9.0	0.0
3700-30	15T 0698578 4598854	11-27-07	SW846 - 6010A	Lots of gravel	Soil	0.0 – 0.5	16.0	12.5	2.9
3700-30FD	15T 069857 4598854	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	16.2	10.4	2.6
Relative Percent Difference (RPD)							1.2	18.3	10.9
*3700-40	15T 0698589 4598863	11-27-07	SW846 - 6010A	Clay-silt, fine sand	Soil	0.0 – 0.5	30.6	11.5	6.0
*3700-40FD	15T 0698589 4598863	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	33.7	10.7	6.3
Relative Percent Difference (RPD)							9.6	7.2	4.9

TABLE 5 (continued)
QUALITY CONTROL SAMPLES
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppm)		
							Lead	Chrome	Cadmium
3700-50	15T 0698619 4598845	11-27-07	SW846 - 6010A	Black loam and clay	Soil	0.0 – 0.5	30.4	18.7	3.1
3700-50FD	15T 0698619 4598845	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	27.9	17.6	3.2
Relative Percent Difference (RPD)							8.6	6.1	3.2
3700-60	15T 0698703 4598782	11-27-07	SW846 - 6010A	Some clay	Soil	0.0 – 0.5	26.1	20.2	4.2
3700-60FD	15T 0698703 4598782	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	35.0	18.2	4.2
Relative Percent Difference (RPD)							29.1	10.4	0.0
3700-70	15T 0698698 4598779	11-27-07	SW846 - 6010A	Black soil	Soil	0.0 – 0.5	30.7	16.8	3.7
3700-70FD	15T 0698698 4598779	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	29.4	20.1	4.0
Relative Percent Difference (RPD)							4.3	17.9	7.8
3700-80	15T 0698701 4598795	11-27-07	SW846 - 6010A	Black loam	Soil	0.0 – 0.5	67.1	20.8	4.6
3700-80FD	15T 0698701 4598795	11-27-07	SW846 - 6010A	Field duplicate	Soil	0.0 – 0.5	63.8	19.6	4.4
Relative Percent Difference (RPD)							5.0	5.9	4.4
3700-90	**15T 0698489 4598875**	**11-27-07**	**SW846 - 6010A**	**Black silty loam**	**Soil**	**3.0 – 4.0**	**236**	**15.2**	**5.4**
3700-90FD	**15T 0698489 4598875**	**11-27-07**	**SW846 - 6010A**	**Field duplicate**	**Soil**	**3.0 – 4.0**	**180**	**14.7**	**4.6**
Relative Percent Difference (RPD)							26.9	3.3	16.0

TABLE 5 (continued)
QUALITY CONTROL SAMPLES
November, 2007

Sample #	Sample Coordinates (UTM)	Sample Collection Date	Analyses	Comments	Matrix	Sample Depth (feet)	Concentration (ppb)		
							Lead	Chrome	Cadmium
3700-201	Not applicable	11-27-07	SW846 - 6010A	Rinseate	Water	Not applicable	50U	15U	3U
3700-204	Not applicable	11-27-07	SW846 - 6010A	Rinseate	Water	Not applicable	50U	15U	3U

Note: J The J-code was added to the sample results to reflect the low extraction recovery associated with analyzing these samples.

U The U-code was added to the sample results to indicate that the compound was not detected; the listed value is the reporting limit for the analysis.

XX Bold text indicates samples deeper than 0 – 6 inches below grade.

* Advanced through 6 to 8 inches of concrete. The shallow sample was collected from 0 – 6 inches below the concrete.

TABLE 6
ENVIRONMENTAL STANDARDS FOR TARGET ANALYTES

	Cadmium	Chromium	Lead
PRG-Residential	37	210	400
PRG-Industrial	450	450	800
SSL-DAF 20	8.0	38	NL
SSL-DAF 1	0.4	2.0	NL

Note: NL Not listed

APPENDIX D

PHOTOGRAPHIC LOG

BLACKHAWK FOUNDRY SAMPLING PHOTOGRAPIC LOG

Photo #: 1	Location: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1003 hrs	Photographer: Eric Hess
Description: View of the B3 and B4 (foreground) sampling areas, looking west.		

Photo #: 3	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1035 hrs	Photographer: Eric Hess
Description: West quarter of sampling area A4, looking east. The tubs on the left edge of the photograph covered some sample points.		

Photo #: 4	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1037 hrs	Photographer: Eric Hess
Description: Far west edge of sampling area A4, looking east. The white circle denotes sample point #89.		

Photo #: 5	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1130 hrs	Photographer: Eric Hess
Description: West edge of sample area C, looking east. The orange flag in the lower left corner is sample point #66. The structure in the left center edge of the photograph is part of a former daycare center.		

Photo #: 6	Location: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1430 hrs	Photographer: Eric Hess
Description: The Geoprobe™ at sample location #01 in area B4, looking northeast.		

Photo #: 7	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1440 hrs	Photographer: Eric Hess
Description: The Geoprobe™ at sample location #03 in area B4, looking south.		

Photo #: 8	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1500 hrs	Photographer: Eric Hess
Description: The Geoprobe™ at sample location #05, facing northwest. The white material in the lower center of the picture is concrete dust at sample location #04.		

Photo #: 11	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1545 hrs	Photographer: Eric Hess
Description: Looking east across the central portions of sampling areas B3 and B4. The white dust patches in the central area of the photograph denote concrete dust from sample collection points.		

Photo #: 13	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1551 hrs	Photographer: Eric Hess
Description: Concrete patch at sample location #03 in area B4, looking down. The boreholes were filled with granular bentonite-clay before the concrete was repaired.		

Photo #: 14	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/26/07	Time: 1654 hrs	Photographer: Eric Hess
Description: Looking southeast along the long axis of area D6. The Geoprobe™ is set up at location #13.		

Photo #: 16	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/27/07	Time: 1005 hrs	Photographer: Eric Hess
Description: The Geoprobe™ is set up at sample location #37 in area B3, looking south. The black rock-like material in the right center of the picture is coke.		

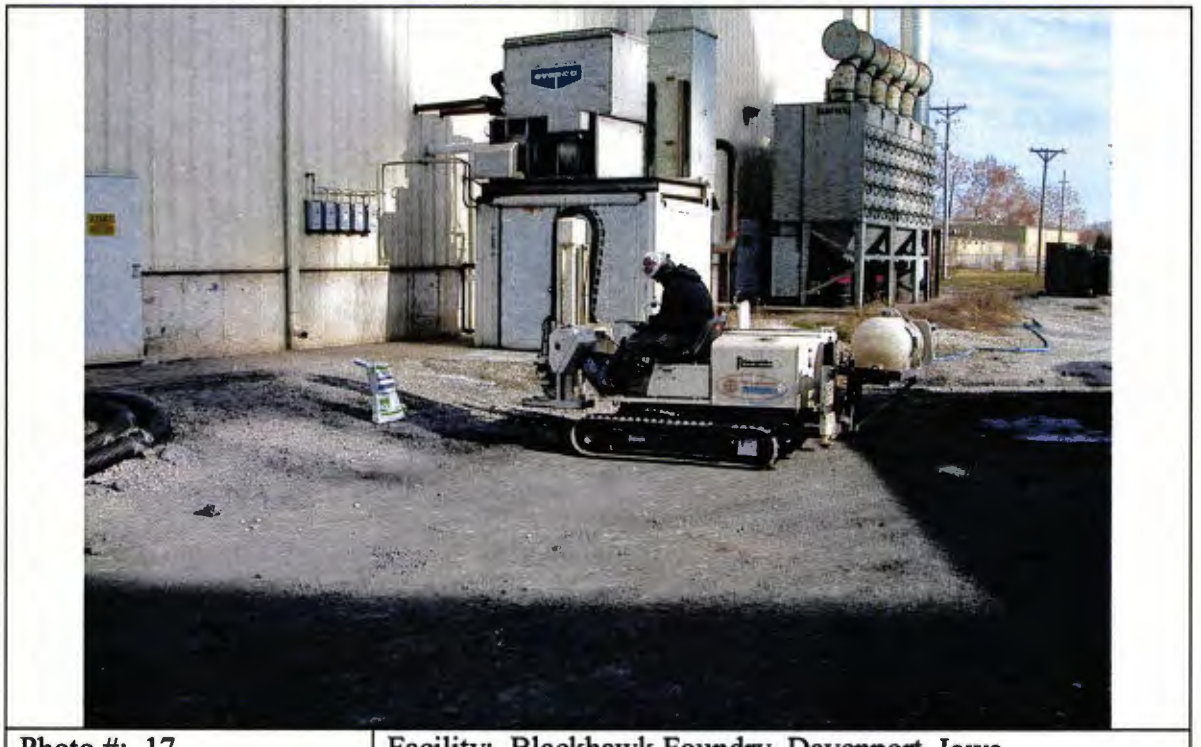


Photo #: 17	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/27/07	Time: 1200 hrs	Photographer: Eric Hess
Description: The Geoprobe™ is set up at location #53 in area B4, looking northeast; the bag in front of it contains granular bentonite-clay used to seal all boreholes.		

Photo #: 19	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/27/07	Time: 1410 hrs	Photographer: Eric Hess
Description: The Geoprobe™ is set up on sample point #66 in area C, looking west. The building in the center-left is a former daycare center.		

Photo #: 21	Facility: Blackhawk Foundry, Davenport, Iowa	
Date: 11/27/07	Time: 1630 hrs	Photographer: Eric Hess
Description: The Geoprobe™ is set up on sample location #92 in area A4, looking west.		

APPENDIX E

TELEPHONE CONVERSATION RECORDS

TELEPHONE CONVERSATION RECORDS

Telephone Conversation Log

Objective: Obtain access for sampling and a acquire facility map

Facility: Blackhawk Foundry	Caller: Eric Hess; SES, Inc.
Contact: Larry Thomsen, Envi. Coord.	Phone: (563) 323-3621
Date: November 1, 2007	Time: 1342 hrs

Summary of Discussion

At 1442 hours, I called Mr. Thomsen. His office is in Human Resources. He was out in the plant when I called and the receptionist took a message for him to call me back, I left my number. The receptionist commented that Mr. Thomsen mentioned he was expecting a call from EPA.

Mr. Thomsen called back at 1354. He said he was expecting my call. We discussed the sampling. He thought we would only be sampling for a day or so. I explained the increased scope of work Cynthia requested (90 sample locations and about 12 deeper borings). I mentioned that we would be using a Geoprobe. Mr. Thomsen had no concerns and said the sampling sounded fine. I asked about conducting the work from November 26 through 30, 2007. He said that would be fine. He said that would give him time to go pheasant hunting. I mentioned that we would be working basically form sun-up to sun-down. He said the facility is well lit and they might be able to provide lights if necessary. I asked if they would want split samples and Mr. Thomsen said they may ask for splits in the "hot" area. I did not get a clarification of which area he was referring to. I said I would arrange utility locates either the week before Thanksgiving or on Monday the 26th. I also mentioned that I would call him the week prior to Thanksgiving to verify the sampling trip and other details.

I asked for a map of the facility, referring to the Stanley Environmental, Inc. map Cynthia gave me (Figure 4 Analytical Results and Locations). He said that this firm was still being used by the Foundry and that I should call Mr. Scott Byrum to get copies of the map. He said that Scott may come down to oversee the sampling. Scott can be contacted at (319) 626-3990 [general office] or at (319) 626-5302 [direct line].

Telephone Conversation Log

Objective: Acquire facility map
Facility: Blackhawk Foundry — Caller: Eric Hess; SES, Inc.
Contact: Scott Byrum, Facility Contractor — Phone: (319) 626-5302
Date: November 1, 2007 — Time: 1409 hrs

Summary of Discussion

At 1409 hours, I called Mr. Byrum. I told him that Mr. Thomsen suggested I contact him. I introduced myself and my connection with the facility, EPA and the upcoming sampling. I told him the sampling dates. I asked for a copy of "Figure 4," the map Cynthia had given me. He said that was made in October 1997 and that he didn't think they still had it electronically. He said Cynthia had had them make an updated map recently. This map is in Auto CAD and he got my e-mail and said he would send the file. He mentioned that he has been working on the facility since 1985, through two different companies.

Telephone Conversation Log

Objective: Set-up utility locates for November 26th at Blackhawk Foundry

Facility: Blackhawk Foundry	Caller: Eric Hess; SES, Inc.
Contact: Iowa One-Call	Phone: (800) 292-8989
Date: November 13, 2007	Time: 0950 hrs

Summary of Discussion

At 0950hours, I called the Iowa "one-call" to set up utility locates at Blackhawk Foundry (323 South Clark Street, Davenport, Iowa), for November 26th after 0900 hours.

I talked with Jamie, he said to call back on Tuesday the 20th.

I called Iowa One-Call, on November 20, 2007, at approximately 1000 hours. I spoke with Lori and arranged a utility locate for November 26th at 1200 hours. The joint utility locate will occur at Blackhawk Foundry, 323 South Clark Street, Davenport, Iowa 52802. The confirmation number is 073240551. The following utilities will be contacted: Mid-America Energy, Quest Local Net, AT&T, City of Davenport Sewer and Traffic, Iowa American Water and Media Com.

SES, INC.
6750 Antioch Road, Suite 305 | Merriam, Kansas 66204 | Phone: (913) 307-0046 | Fax: (913) 307-0059

January 15, 2008

Cynthia Hutchison, ENSV/EAMB
U.S. Environmental Protection Agency
901 N. 5th Street
Kansas City, Kansas 66208

RE: Transmittal of Data Summary Report for Blackhawk Foundry, Davenport, Iowa
Task Order Proposal No. 1
Regional Task Order Number: R726-02
Contract Number: EP-W-07-26

Dear Ms. Hutchison:

SES, Inc. (SES) is submitting a final copy of the data summary for the Blackhawk Foundry site, Davenport, Iowa, sampled in November 2007. SES is also including a copy of the chain-of-custody forms.

If you have any questions please call me at (913) 307-0046, ext 13.

Sincerely,

Eric Hess
Project Manager
Vice President
SES , Inc.

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Eric Hess	Blackhawk foundry	11 / 26 / 07	1 of 5

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	POWER BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
3700-1				1			✓				
700-2				1			✓				
3700-3				1			✓				
3700-4				1			✓				
3700-5				1			✓				
700-6				1			✓				
3700-7				1			✓				
3700-8				1			✓				
3700-9				1			✓				
3700-10				1			✓				
3700-10(D)				1			✓				
3700-11				1			✓				
3700-12				1			✓				
3700-13				1			✓				
3700-14				1			✓				
3700-15				1			✓				
3700-16				1			✓				
3700-17				1			✓				
3700-18				1			✓				
3700-19				1			✓				
3700-20				1			✓				
3700-21				1			✓				
3700-21(D)				1			✓				
3700-22				1			✓				

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

2 ICE CHEST(S): OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
(SAMPLER) ☐ SEALED ☒ UNSEALED	11/29/07	11:30	RDWiggam ☐ SEALED ☐ UNSEALED	Reid at lab
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	

7-EPA-9262(Revised 5/85)

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Eric Hess	Blackhawk Foundry	11 / JA / 07	2 of 5

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
3700-23				1			✓				
3700-24				1			✓				
3700-25				1			✓				
3700-26				1			✓				
3700-27				1			✓				
3700-28				1			✓				
3700-29				1			✓				
3700-30				1			✓				
3700-30(D)				1			✓				
3700-31				1			✓				
3700-32				1			✓				
3700-33				1			✓				
3700-34				1			✓				
3700-35				1			✓				
3700-36				1			✓				
3700-37				1			✓				
3700-38				1			✓				
3700-39				1			✓				
3700-40				1			✓				
3700-40(D)				1			✓				
3700-41				1			✓				
3700-42				1			✓				
3700-43				1			✓				
3700-44				1			✓				

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ COURIER

____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☒	11/29/07	11:30	SEALED ☐ UNSEALED ☐	Rec'd at lab
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	

7-EPA-9262(Revised 5/85)

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Eric Hess	Blackhawk foundry	11 / 9 / 07	3 of 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	8 ounce BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
3700-45				1			✓				
3700-46				1			✓				
3700-47				1			✓				
3700-48				1			✓				
3700-49				1			✓				
3700-50				1			✓				
3700-50FD				1			✓				
3700-51				1			✓				
3700-52				1			✓				
3700-53				1			✓				
3700-54				1			✓				
3700-55				1			✓				
3700-56				1			✓				
3700-57				1			✓				
3700-58				1			✓				
3700-59				1			✓				
3700-60				1			✓				
3700-60FD				1			✓				
3700-61				1			✓				
3700-62				1			✓				
3700-63				1			✓				
3700-64				1			✓				
3700-65				1			✓				
3700-66				1			✓				

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S); OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ COURIER

____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☒	11/29/07	11:30	RDWiggins SEALED ☐ UNSEALED ☐	Rec'd at lab
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	

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CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Eric Hess	Blackhawk foundry	11 / 29 / 07	4 of 5

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE (5 pints)	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
3700-67				1			✓				
3700-68				1			✓				
3700-69				1			✓				
3700-70				1			✓				
3700-70D				1			✓				
3700-71				1			✓				
3700-72				1			✓				
3700-73				1			✓				
3700-74				1			✓				
3700-75				1			✓				
3700-76				1			✓				
3700-77				1			✓				
3700-78				1			✓				
3700-79				1			✓				
3700-80				1			✓				
3700-80D				1			✓				
3700-81				1			✓				
3700-82				1			✓				
3700-83				1			✓				
3700-84				1			✓				
3700-85				1			✓				
3700-86				1			✓				
3700-87				1			✓				
3700-88				1			✓				

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ COURIER

____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) ____

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☒	11/29/07	11:30	RJ Weggan SEALED ☐ UNSEALED ☐	Rec'd at lab
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	

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CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Eric Hess	Blackhawk Foundry	14 / 9 / 07	5 of 5

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: 1 CUBITAINER	BOTTLE	BOTTLE	8 ounce BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
3700-89				1			✓				
3700-90				1			✓				
3700-90FD				1			✓				
3700-91				1			✓				
3700-92				1			✓				
3700-93				1			✓				
3700-94				1			✓				
3700-95				1			✓				
3700-96				1			✓				
3700-97				1			✓				
3700-98				1			✓				
3700-99				1			✓				
3700-100				1			✓				
3700-101				1			✓				
3700-102				1			✓				
3700-201	✓					✓					
3700-204	✓					✓					

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ COURIER

____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) ____

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☒	11/29/07	11:30	SEALED ☐ UNSEALED ☐	Rec'd at lab
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	

7-EPA-9262(Revised 5/85)